No. 200000321

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Louisiana Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN CING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY TION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'LA422'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this twelfth day of September, in the year two thousand one.*

Attest:

Paul M. Zankowski

Commissioner
Plant Variety Protection Office

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
Louisiana Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
LA85422-C13-1-4-2

3. VARIETY NAME
LA422

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
LSU Agricultural Center
P.O. Box 25055
Baton Rouge, LA 70894-5055

5. TELEPHONE *(include area code)*
(225) 388-2110

6. FAX *(include area code)*
(225) 388-1403

FOR OFFICIAL USE ONLY

PVPO NUMBER
200000321

FILING DATE
August 14, 2000

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
land grant university

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*

Dr. Stephen A. Harrison
Agronomy Department
Louisiana State University
Baton Rouge, LA 70803-2110

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 2450.00
DATE 8/14/00

CERTIFICATION FEE:
$ 320.00
DATE 8/16/01

11. TELEPHONE *(Include area code)*
(225) 388-1308

12. FAX *(Include area code)*
(225) 388-1403

13. E-MAIL
sharrison@agctr.lsu.edu

14. CROP KIND *(Common Name)*
wheat

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

- a. ☑ Exhibit A. Origin and Breeding History of the Variety
- b. ☑ Exhibit B. Statement of Distinctness
- c. ☑ Exhibit C. Objective Description of Variety
- d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
- e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
- f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. ☑ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 20 and 21 below)* ☑ NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? ☐ YES ☑ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

21. DOES THE OWNER SPECIFY THAT THE CLASSES BE LIMITED AS TO NUMBER OF GENERATIONS? ☐ YES ☑ NO
IF YES, SPECIFY THE NUMBER 1, 2, 3, *etc.* ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
YES ✓ NO

IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO

IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER
Stephen A Harrison

NAME *(Please print or type)*
Stephen A. Harrison

CAPACITY OR TITLE
Professor – Plant Breeder

DATE
July 25, 2000

SIGNATURE OF OWNER

NAME *(Please print or type)*

CAPACITY OR TITLE

DATE

200000321

INSTRUCTIONS

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvp.htm

ITEM

18a. Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

21. *See Section 83 of the Act for the Contents and Term of Plant Variety Protection.*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.*

21. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

The date of first sale was September 13, 1999.

23. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089.

S&T-470 (2-99) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (6-98) which is obsolete.

200000321

Exhibit A
Origin and Breeding History
Terral 'LA422' Wheat

revised June 5, 2001

Terral 'Secretariat LA495' was developed by the LSU Agricultural Experiment Station, Louisiana Agricultural Experiment Station as follows.

The original cross, designated FL85322, was made in 1985 by Dr. Ron Barnett of the University of Florida. The parentage of LA422 is as follows:

FL302/IN76529A5-4

FL302 is Florida 302 (PVP8500054, PI601163), which was the most widely grown cultivar in the southeastern US during the mid 1980's.

IN76529A5-4 is a breeding line form the Purdue University program. 76529A5-4 was in the USDA Uniform Hessian Fly Nursery in the early 80s for genes H9 and H10 from Elva (Crop Sci 22:902-903) and H6 from PI94587.

IN76529 is: Arthur/3/P5517B8-5-3-3//Monon/Elva.
P5517 is: Redcoat/8/Norin33/5/Fairfield/4/PI94587//Fultz/Hungarian/3/Fultz/Hungarian/6/Trumbull*3//Hope/Hussar/4/Trumbull/3/W38-6//Fultz/Hungarian/7/Knox.

1985 Cross 85322 made in the spring greenhouse by Dr. Ron Barnett

1986 F1 The F_1 generation was grown by Dr. Ron Barnett in the greenhouse during the spring.

1987 F2 The F_2 seed were grown in the field as Florida Wheat Observation Plot 398. A bulk sample of heads was harvested from this plot with some selection for plant type, height, and head type and general disease resistance.

1988 F3 The F_3 seed from this bulk harvest was planted at Plains, GA. Again there was some selection for plant type, height, head type, and general disease resistance. Individual heads were selected.

1989 F4 The $F_{3:4}$ generation was grown as headrows at Plains GA. The row designated 85322C13-1 was selected and harvested as a bulk row. Selections was based on plant type, height, head type, and general disease resistance.

1990 F5 $F_{4:5}$ observation plots were evaluated at Plains, GA.

1991 F6 $F_{4:6}$ preliminary yield trials. Heads were reselected from this preliminary yield trial.

1992 The $F_{6:7}$ line (reselected) was grown in 92SETM headrows as row 1056 at Attapulgus, Georgia.

The line was designated 85322-C13-1-4-2. The row was selected by Dr. Steve Harrison, harvested by Dr. Phil Bruckner, and shipped to the LAES. Selection was for plant type, tillering, leaf rust resistance, lodging resistance, and maturity.

1993 The line was designated as LA85422-C13-1-4-2 and entered in LAES wheat observation plots (plot 659) utilizing and augmented design. The plot was selected for grain yield, seed quality, leaf rust resistance, lodging resistance, uniformity, and test weight.

1994 LA85422-C13-1-4-2 was entered in LAES prelim-A at three locations in Louisiana. A seed purification and increase block was grown at Alexandria, LA. The seed block was rogued and all offtypes were removed.

1995 LA85422-C13-1-4-2 was entered in LAES statewide performance trials and a seed increase block was again grown at Alexandria, LA.

1996 LA85422-C13-1-4-2 was entered in LAES statewide performance trials and in the USDA Uniform Southern Soft Red Winter Wheat Nursery (USSRWWN) across the southern US.

1997 LA85422-C13-1-4-2 was entered in LAES statewide performance trials and in the USSRWWN. A seed increase on LA85422C13-1-4-2 was produced at the Dean Lee Research Station in Alexandria, LA. The breeder seed increase was carefully rogued to remove any offtypes and ensure purity.

LA85422-C13-1-4-2 was offered for release as LA85422 to commercial concerns in September of 1997 and was licensed to Terral Seed. Approximately 200 bushels of breeder seed was turned over to Terral Seed in the summer of 1998.

Selection and Observed Characters

LA422 is and F_6 derived line. It was selected by Dr. Phil Bruckner in early generations. Selection criteria is outlined above and included selection for leaf rust resistance and plant type in each generation. The variety has been shown to be true-breeding across multiple generations and environments. Coleoptile anthocyanin is sometimes faint in this variety and degree of expression if affected by the environment.

Stability:

The variety has been observed to be stable and uniform across multiple locations from 1994 through 2000 (eight generations).

Variants

The variety has a low frequency of variants that include:

1. Slightly taller (up to 9 cm) variants occur at up to 0.1% frequency.

Exhibit B
Novelty Statement
LA422 wheat
revised April 2001

LA422 is most similar to Florida 302. Florida 302 was the male parent of LA422. Both varieties are awned, and have similar heading dates and heights (LA422 is 2 days earlier and 2" shorter). Both varieties have ovate seed, rounded cheek, not collared, and red. Seed heads of both varieties are larger than most varieties and light in color. Both varieties have fairly broad, green leaves.

Florida 302 has occasional inverted and supernumerary florets, particularly obvious in high-yield environments. LA422 does not possess this trait.

Florida 302 is susceptible to many leaf rust races, including PLMQ, MCJL, TCDL, NCDL, and PNML. It is postulated by the USDA Cereals Disease Lab, St. Paul, MN. To contain only *LR10* based on seedling tests as part of the in the 1995-96 and 1996-97 USDA Uniform Southern Soft Red Winter Wheat Nursery (USSRWWN).

LA422 is resistant to most leaf rust races, including PLMQ, MCJL, TCDL, NCDL, and PNML. LA422 is postulated by the USDA Cereal Disease Lab to contain unknown genes, listed as "+" in the postulated gene column of the same USSRWWN.

Florida 302 had significantly more leaf rust in the USSRWWN at Baton Rouge in 1996 and 1997. Florida 302 also had more leaf rust than LA422 in four locations reporting leaf rust in 1997; significance not given in USDA nursery report.

USSRWN leaf rust results at Baton Rouge for 1996 and 1997 (Percent rust).		
	1996	1997
Florida 302	3	55
LA422	0	0
Test mean (33 entries)	1	7
LSD (0.05)	2	10

1997 USSRWN leaf rust results at locations with leaf rust. (0 - no leaf rust, 9 = severe leaf rust).				
	Shelby, MS	Kintson, NC	Overton, TX	Warsaw, VA
Florida 302	8	6	9	7
LA422	2.5	1	2	3
Test mean (33 entries)	4.6	2.2	2.2	3.9

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT C
(*Wheat*)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*Triticum* spp.)

NAME OF APPLICANT(S)
Louisiana Agricultural Experiment Station

ADDRESS (Street and No. or RD No., City, State, and Zip Code)
Louisiana Agricultural Experiment Station
LSU Agricultural Center
PO Box 25055
Baton Rouge, LA 70894-5055

FOR OFFICIAL USE ONLY

PVPO NUMBER
200000321

VARIETY NAME
LA422

TEMPORARY OR EXPERIMENTAL DESIGNATION
LA85422-C13-1-4-2

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g. [0][9] or [0][9]) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used:
Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND:

[1] 1=Common 2=Durum 3=Club 4=Other (SPECIFY): _____

2. VERNALIZATION:

[3] 1=Spring 2=Winter 3=Other (SPECIFY): Facultative

3. COLEOPTILE ANTHOCYANIN:

[2] 1=Absent 2=Present

4. JUVENILE PLANT GROWTH:

[2] 1=Prostrate 2=Semi-erect 3=Erect

5. PLANT COLOR (boot stage):

[2] 1 = Yellow-Green 2 = Green 3 = Blue-Green

6. FLAG LEAF (boot stage):

MM 1/24/2001

[2] 1 = Erect 2 = Recurved [1] 1 = Not Twisted 2 = Twisted

7. EAR EMERGENCE:

[0][2] Number of Days Earlier Than Florida 302 *

[0][0] Number of Days Later Than USG 3209 *

8. ANTHER COLOR:

[1] 1 = Yellow 2 = Purple

9. PLANT HEIGHT (from soil to top of head, excluding awns):

[0][5] cm Taller Than Coker 9835 *

[0][7] cm Shorter Than Florida 302 *

* Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

10. STEM:

A. ANTHOCYANIN

[1] 1= Absent 2=Present

B. WAXY BLOOM

[1] 1=Absent 2=Present

C. HAIRINESS (last internode of rachis)

[2] 1=Absent 2=Present

D. INTERNODE (SPECIFY NUMBER)

[1] 1= Hollow 2=Semi-solid 3=Solid

E. PEDUNCLE

[2] 1=~~Absent~~ erect 2=~~Present~~ re-curved

3 [4] cm Length

11. HEAD (at Maturity):

A. DENSITY

[2] 1=Lax 2=Middense 3= Dense

B. SHAPE

[1] 1 = Tapering 2= Strap 3 = Clavate 4 = Other (SPECIFY): _____

C. CURVATURE

[1] 1 = Erect 2 = Inclined 3 = Recurved

D. AWNEDNESS

[4] 1 = Awnless 2 = Apically Awnletted 3 = Awnletted 4 = Awned

12. GLUMES (at Maturity):

A. COLOR

[2] 1 = White 2 = Tan

3 = Other (SPECIFY) : _____

B. SHOULDER

[1] 1 = Wanting 2 = Oblique 3 = Rounded 4 = Square 5 = Elevated 6 = Apiculate

C. BEAK

[3] 1 = Obtuse 2 = Acute 3 =Acuminate

D. LENGTH

[3] 1 = Short (ca. 7mm) 2 = Medium (ca. 8mm) 3 = Long (ca. 9mm)

12. GLUMES (at Maturity) *Continued*: 200000321

E. WIDTH

[2] 1 = Narrow (ca. 3mm) 2 = Medium (ca. 3.5mm) 3 = Wide (ca. 4mm)

13. SEED:

A. SHAPE

[1] 1 = Ovate 2 = Oval 3 = Elliptical

B. CHEEK

[1] 1=Rounded 2=Angular

C. BRUSH

[2] 1=Short 2=Medium 3=Long

[1] 1 = Not Collared 2 = Collared

D. CREASE

[1] 1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

[3] 1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

E. Color

[3] 1=White RHS161B ✓ 2= Amber 3= Red
4= OTHER (Specify)

F. TEXTURE

[2] 1=Hard 2=Soft

G. PHENOL REACTION *(see instructions)*:

[4] 1 = Ivory 2 = Fawn
3 = Light Brown 4 = Dark Brown
5 = Black

14. DISEASE: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

[3] Stem Rust *(Puccinia graminis* f. sp. *tritici)*
see attached ✓

[0] Stripe Rust *(Puccinia striiformis)*

[0] Tan Spot *(Pyrenophora tritici-repentis)*

[0] Halo Spot *(Selenophoma donacis)*

[3] *Septoria nodorum* (Glume Blotch)
field reaction ✓

[0] *Septoria avenae* (Speckled Leaf Disease)

[3] *Septoria tritici* (Speckled Leaf Blotch)
field reaction ✓

[0] Scab (*Fusarium* spp.)

[R] Leaf Rust *(Puccinia recondita* f. sp. *tritici)*
see supplement ✓

[0] Loose Smut *(Ustilago tritici)*

[0] Flag Smut *(Urocystis agropyri)*

[0] Common Bunt *(Tilletia tritici* or *T. laevis)*

[0] Dwarf Bunt *(Tilletia controversa)*

[0] Karnal Bunt *(Tilletia indica)*

[3] Powdery Mildew *(Erysiphe graminis* f. sp. *tritici)*
see supplement ✓

[0] "Snow Molds"

14. Disease *(Continued)* (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED

[0]	"Black Point" (Kernel Smudge)	[0]	Common Root Rot *(Fusarium, Cochliobolus* and *Bipolaris* spp.*)*
[0]	Barley Yellow Dwarf Virus (BYDV)	[0]	Rhizoctonia Root Rot *(Rhizoctonia solani)*
[0]	Soilborne Mosaic Virus (SBMV)	[0]	Black Chaff *(Xanthomonas campestris* pv. *translucens)*
[0]	Wheat Yellow (Spindle Streak) Mosaic Virus	[0]	Bacterial Leaf Blight *(Pseudomonas syringae* pv. *syringae)*
[0]	Wheat Streak Mosaic Virus (WSMV)	[0]	Other (SPECIFY)
[0]	Other (SPECIFY)	[0]	Other (SPECIFY)
[0]	Other (SPECIFY)	[0]	Other (SPECIFY)
[0]	Other (SPECIFY)	[0]	Other (SPECIFY)

15. INSECT: (0=Not Tested; 1=Susceptible; 2=Resistant; 3=Intermediate; 4=Tolerant)

PLEASE SPECIFY BIOTYPE (where needed)

[1]	Hessian Fly *(Mayetiola destructor)* B, C, D, E, L	[0]	Other (SPECIFY)
[0]	Stem Sawfly *(Cephus* spp.)	[0]	Other (SPECIFY)
[0]	Cereal Leaf Beetle *(Oulema melanopa)*	[0]	Other (SPECIFY)
[0]	Russian Aphid *(Diuraphis noxia*	[0]	Other (SPECIFY)
[0]	Greenbug *(Schizaphis graminum)*	[0]	Other (SPECIFY)
[0]	Aphids	[0]	Other (SPECIFY)

16. ADDITIONAL INFORMATION ON ANY ITEM ABOVE, OR GENERAL COMMENTS

Exhibit C - supplement
Objective Description
LA422 wheat
August 7, 2000

14. Disease

Powdery Mildew:
LA422 shows an intermediate reaction to powdery mildew across test environments. The reaction of LA422 to specific races varies for resistant to intermediate to susceptible. In the 1997 USDA Uniform Southern Soft Red Winter Wheat Nursery (97USSRWWN) LA422 had a lower powdery mildew rating (less disease) than the test mean at 9 of 11 locations. In greenhouse tests conducted nu USDA scientists on the 97USSRWWN LA422 was resistant or moderately resistant to 29 isolates and susceptible to 9 isolates.

isolates R-MR to = Yuma, 127, Aso, F7-11, 3a, 6, 144, ABK, #5, #6, E3-14, 43a1, 73b2, 169-1b, #2, #7, #4, W72-27, E3-25, B5083, #10, E2-15, 216a, 153a2, 121a1, 101a2, 152-2c, 145-2a

Isolates S - MS to = Pm4, Mo10, F7-12, Asm, Wkln91, #9, 156b1, 43a2, 137a1, 93b2,

In the same test in 1996 LA422 showed a resistant or intermediate reaction to 16 of 36 numbered isolates.

Stem Rust:

Tests conducted by the USDA Cereal Disease Lab on the 97USSRWWN indicate that LA422 segregates for *Sr*10. It showed a susceptible reaction to races QTHJ and TPMK. The reaction of LA422 was intermediate or mixed for races QFQC, RKRQ, RTQQ, and RTRQ.

The same tests conducted in 1996 indicated that LA422 is resistant to HKCJ, QFCQ, QTHJ, RKQQ, RTQQ, and TPMK. LA422 showed a susceptible reaction to RKRQ. Results of this tested showed resistance in LA422, but did not postulate specific genes because the line was resistant to most races.

Leaf Rust:

Seedling tests conducted by the USDA Cereal Disease Lab on the 97USSRWWN indicate that LA422 has the following reaction to test leaf rust races. No specific LR genes were postulated because LA422 was resistant to most isolates tested.

LA422 was resistant to:
PLMQ, MCJL, TCDL, LBBQ, TCBQ, TLGG, and PNML
LA422 was susceptible to MBRL

The same test conducted in 1996 showed that LA422was:
resistant to CBTB, SCJB, MCDL

susceptible to TFBL, TLGG, PMMQ
Intermediate/mixed for MBRL, NCDL, THGL
No specific LR genes were postulated because LA422 was resistant to most isolates tested

Septoria:

Data from the 97USSRWWN show that LA422 has an intermediate reaction to Septoria, which includes *Septoria tritici* and *Septoria nodorum*.

Terral LA422 wheat
Exhibit D
revised Apr 9, 2001
Additional Description of Variety

LA422 was developed from the cross: Florida 302/ IN76529A5-4, which was made by Ron Barnett of the University of Florida and identified as FL85322. LA422 has yielded very well in Louisiana, particularly in South Louisiana. It ranked first in yield for one- (1997), two- (1996 & 1997) , and three-year (1995, 1996, & 1997) means across South Louisiana; and tenth, fourth, and fifth across North Louisiana for the same periods. LA422 was average in yield across Southern locations of the 1996 USDA Uniform trials, probably due to the late freeze of 1996. It performed very well across the same region in 1997. LA85422 also performed very well in Arkansas in 1997, ranking 7th at Rowher and 2nd at Hope, of 70 entries. LA422 had the highest yield of 52 entries in state trials at Raymond, MS.

Test weight and milling and baking quality of LA422 are good (Table). LA422 had a milling quality of 97.6 and a baking quality of 91.2 in Region 1 of the 1997 USSRWWN as determined by the USDA Soft Wheat Quality Lab. Florida 302, the high-quality standard, had a milling quality of 102.6 and a baking quality of 82.4. Pioneer 2643 had rating of 95.6 and 87.7, respectively. Softness equivalent of LA422 was 57.1, flour yield was 69.1%, and cookie diameter was 17.8 Results from Region 2 were similar.

Quality data from 1997 USSRWWN.

	Milling Score	Baking Score	Softness Equiv.	Flour Yield	Flour Protein	AWRC	Cookie Daim
Region 1							
LA422	97.6	91.2	57.1	69.1	8.36	55.4	17.75
FL302	102.6	82.4	59.2	70.2	8.42	54.4	17.24
Pioneer 2643	95.6	87.7	56.9	68.6	8.33	56.1	17.59
Region 2							
LA422	100.9	97.7	55.0	70.2	7.97	55.2	17.48
FL302	101.8	95.4	59.6	69.6	8.49	53.9	17.18
Pioneer 2643	94.9	100.7	57.8	68.1	8.52	56.8	17.23

LA422 has excellent resistance to current races of leaf rust is excellent. LA422 had an average test weight across 16 tests in Louisiana of 56.0 lbs/bu, versus 56.1 lbs/bu for FFR 502W and 55.5 lbs/bu for Terral TV8825, and 54.1 lbs/bu for Coker 9835. LA422 has moderate resistance to powdery mildew and septoria, and has fair to good resistance to stem rust. It is susceptible to Hessian Fly. LA422 is awned like Florida 302 and of average height, equal to AgriPro Mason and shorter than Coker 9663. It has a tendency to lodge in some environments and may not stand high N rates on fertile soils, but should do very well on heavier soils or at average N rates, much like Coker 9663. LA422 has a minimal

vernalization requirement, shows some photoperiodic heading response, and heads a day or two earlier than the test mean in most environments. LA422 will probably be best adapted to Louisiana, the Southern half of Arkansas, Mississippi and Alabama, and the coastal plain areas of the Carolinas and Georgia, where Hessian Fly is not a problem. LA422 should perform well in regions somewhat north of these areas in years when there is not a late freeze, or when planted later in the planting season.

Exhibit E
Statement of Ownership
LA422 wheat
August 7, 2000

LA422 was developed and is solely owned by the Louisiana Agricultural Experiment Station. It was developed in cooperation with the University of Georgia and University of Florida and is licensed to Terral Seed Company, Inc.

REPRODUCE LOCALLY. *Include form number and edition date on all reproductions.* FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Louisiana Agriculture Experiment Station	LAB5422-C13-1-4-2	LA422

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(Include area code)*	6. FAX *(Include area code)*
Agronomy Department Louisiana State University Baton Rouge, LA 70803	225-578-2110	225-578-1403
	7. PVPO NUMBER 20000321	

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [X] YES [ ] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?
[ ] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?
[ ] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

Liscensed to Terrel Seed Co., Inc. exclusive marketing

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.